PRE CALCULUS **ASSG.#_____**

Midterm Review MR1

NAME_____DATE_____PER_____

SHOW ALL THE WORK CLEARLY.

Find the following in problems 1 – 4:

- **a) The number of complex roots.**
- **b) List the possible rational roots**
- **c) Determine the <u>rational</u> roots**

1) $6x^3+11x^2-3x-2=0$

2) $x^3-4x^2+x+2=0$

3) $2x^3+3x^2-8x+3=0$

4) $2x^4+3x^3-6x^2-11x-3=0$

Use the remainder theorem to find the remainder for each division. State whether the binomial is a factor of the polynomial:

5) $\left(x^3-x+6\right)\div\left(x-2\right)$

6) $\left(2x^3-3x^2+x\right)\div\left(x-1\right)$

Determine the <u>binomial factors</u> of each polynomial:

7) x^3+4x^2-x-4

8) x^3+3x^2+3x+1

Find all the roots of:

9) $x^3+8x^2+16x+5=0$

1a)	
b)	
c)	
2a)	
b)	
c)	
3a)	
b)	
c)	
4a)	
b)	
c)	
5)	
6)	
7)	
8)	
9)	

Solve each inequality:

10) $\frac{2}{w}+3>\frac{29}{w}$

11) $\frac{(x-3)(x-4)}{(x-5)(x-6)^2}\le 0$

12) $\frac{1}{4a}+\frac{5}{8a}>\frac{1}{2}$

Perform the indicated operation. Simplify all answers.

13) $\frac{4bc}{3a^2}\bullet\frac{7a}{2bc^2}$

14) $\frac{9}{5y}-\frac{1}{6y}$

15) $\frac{x^2+7x}{x^2-49}\bullet\frac{x^2+4x-21}{x^2-3x}$

10)
11)
12)
13)
14)
15)